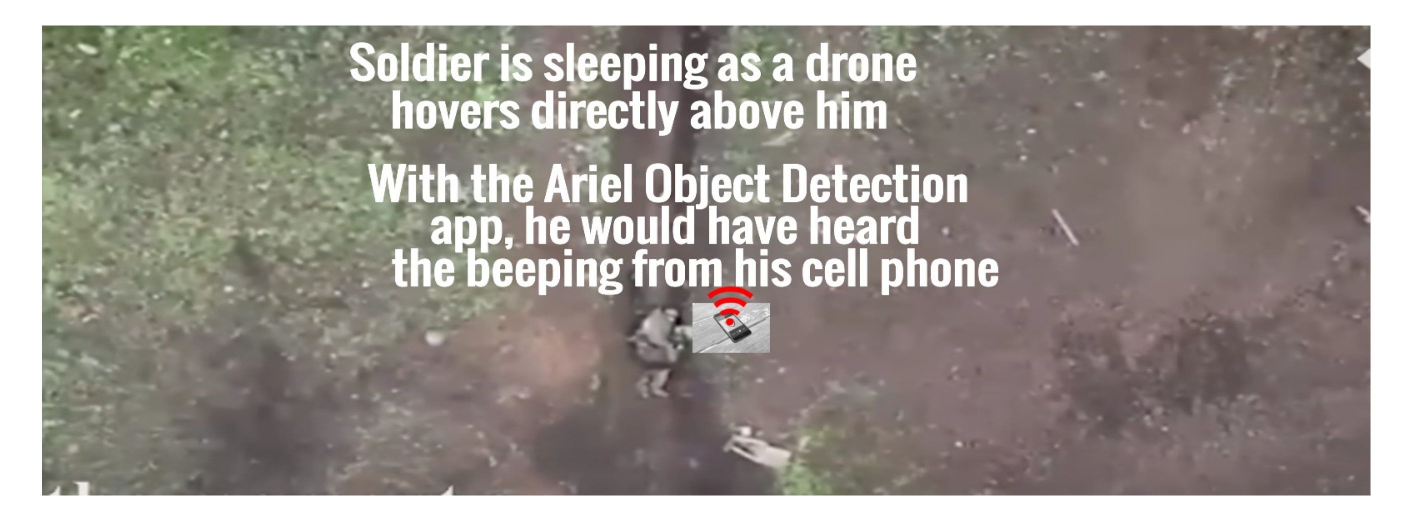
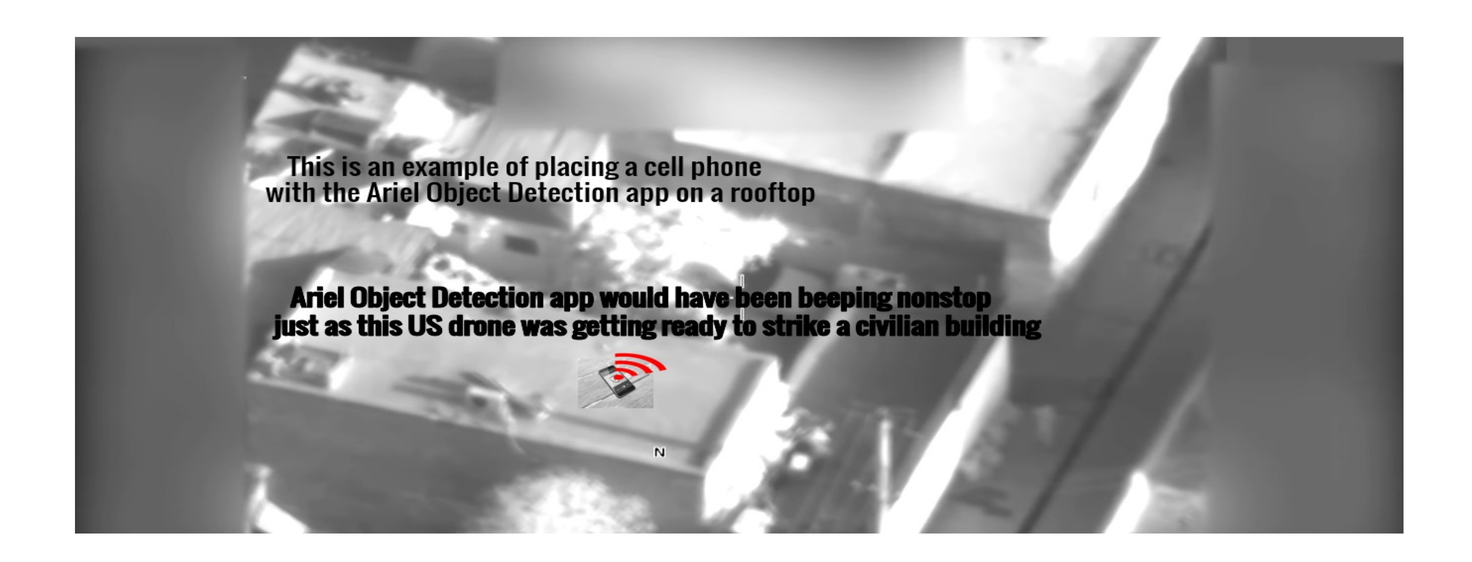
Aerial Object Detection (updated for combat deployment)

by Anthony of Boston

Wait for the model to load before clicking the button to enable the webcam - at which point it will become visible to use. The app will beep when an aerial object is located. The longer an aerial object is hovering near you, the longer the beeping noise. For soldiers, this could mean that a drone is targeting them. Ideally, soldiers would use the app on their cell phones and attach the device to the top area of their vehicles or to their body while sleeping in the trenches. Keep mind that sim cards must be removed and cell phone wireless connectivity must remain "off" in combat environments. Before deployment, soldiers should connect to wifi and start the app. Once the app is started, a soldier can then disable wifi and leave the app running as he/she is deployed into a combat zone. For detecting aerial objects in combat, android phone should be mounted to the top of the backpack or top of the helmet.

In civilian environments, the cell phone, with wireless turned on, could be placed on rooftops. With internet access, a user could view the aerial scene remotely with facebook live

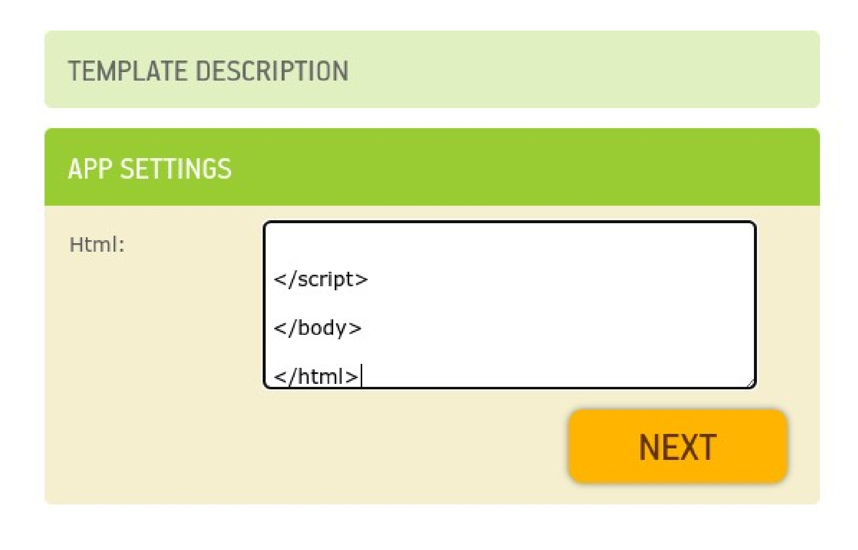




From page 6 to page 20, is the HTML code for the Aerial Object Detection App that you can copy and paste and test in html:

In order to create a cell phone app, first download this doc file and then copy and paste the html code that starts on page 6. Then go to https://appsgeyser.com/create-html-app/

When you get to the website, click next and then paste the HTML code into the box



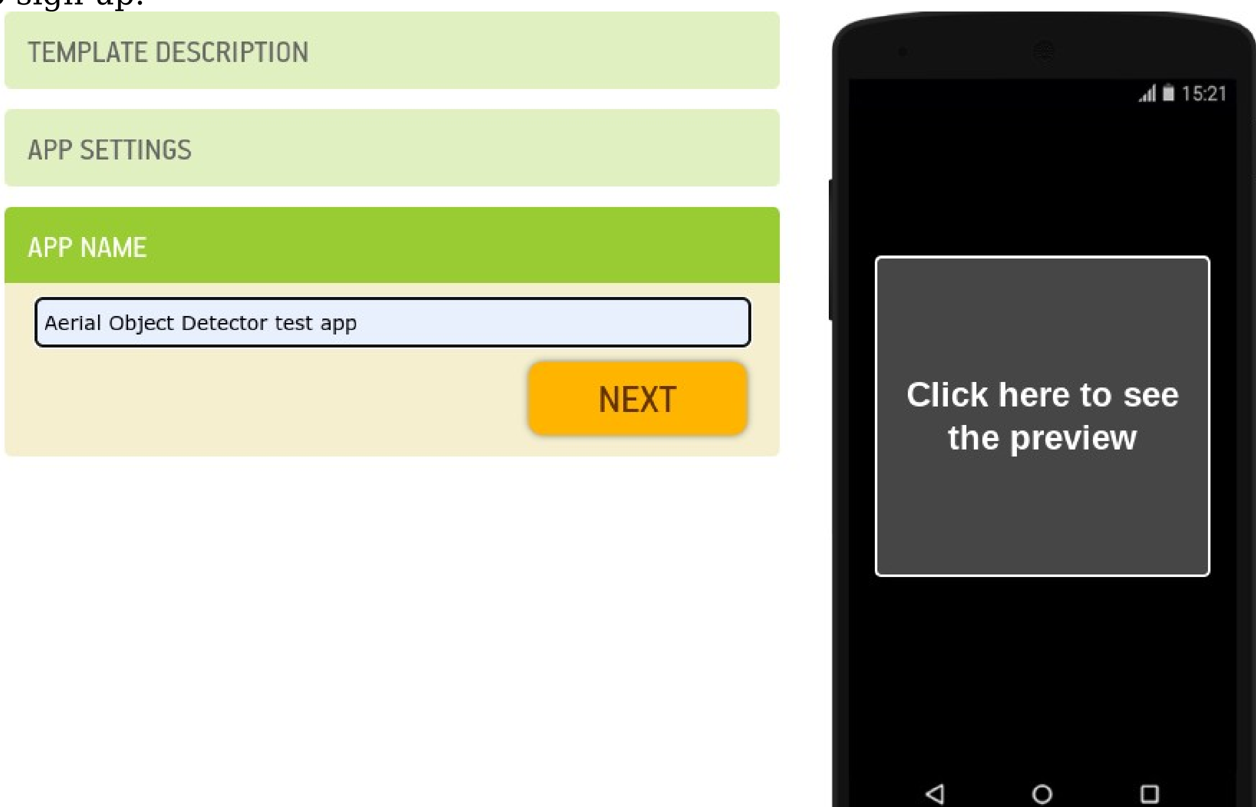


You can preview the app on the right by clicking the gray box which says "Click here to see preview."

Otherwise, click "Next"

Then add a title to your Aerial Object Detection app

During this process, you will be asked to open an account. Register or use gmail to sign up.

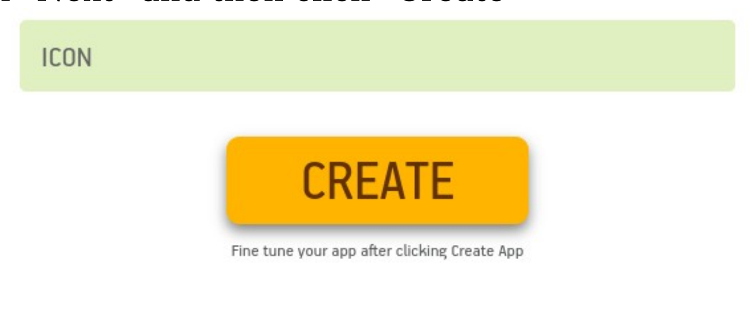


Click "Next", and then choose Icon



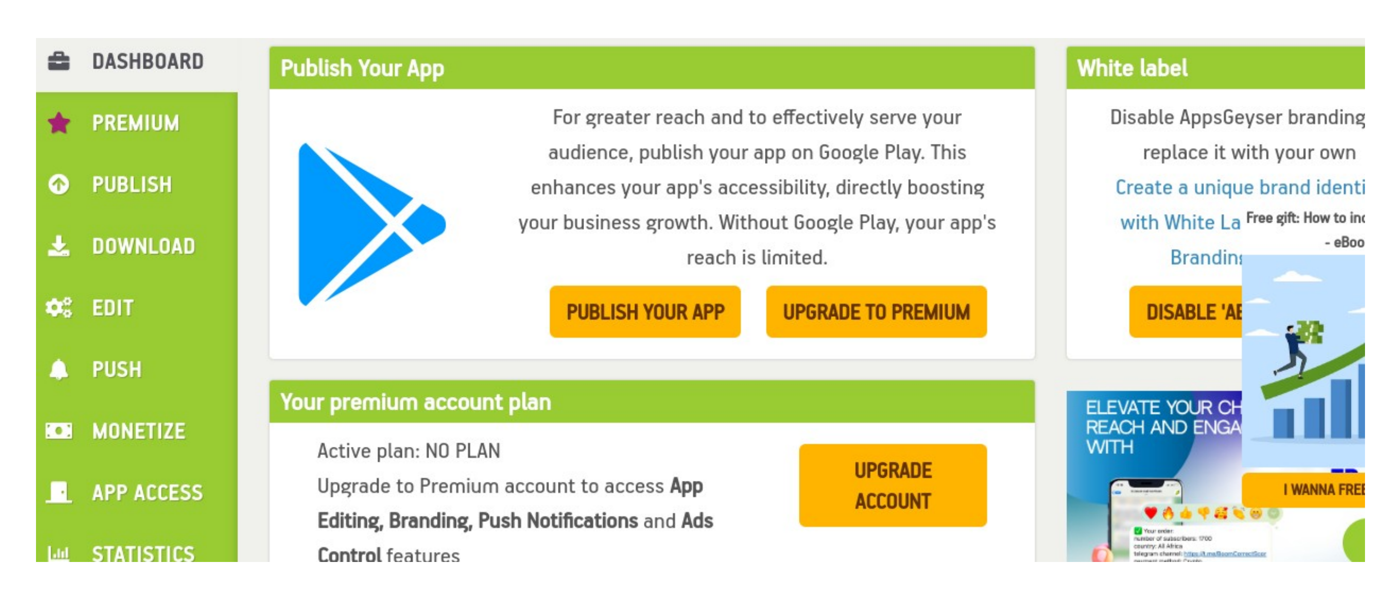


Click “Next” and then click “Create”

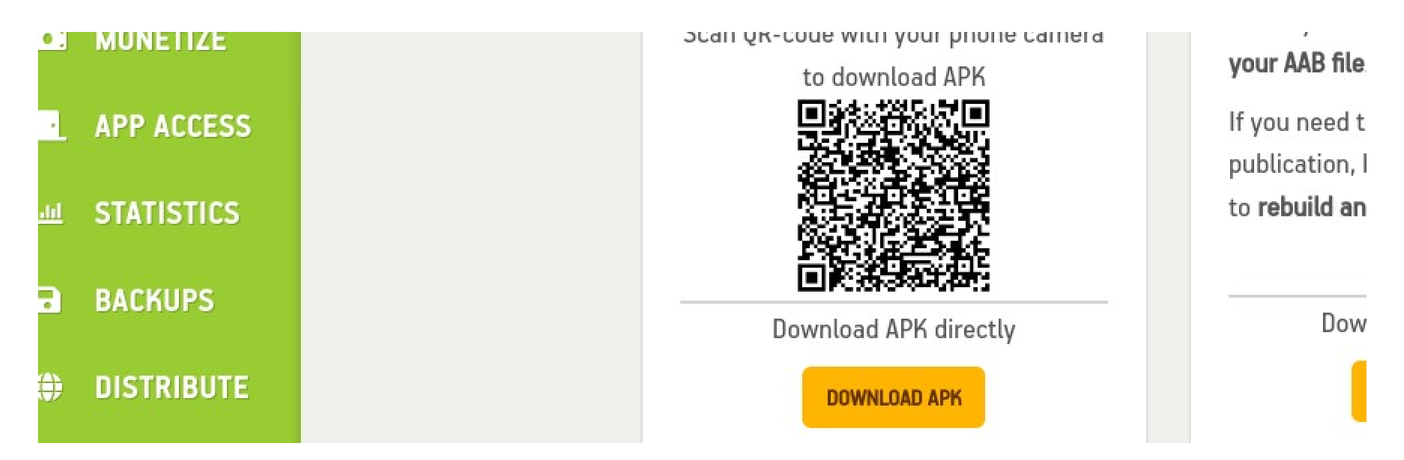




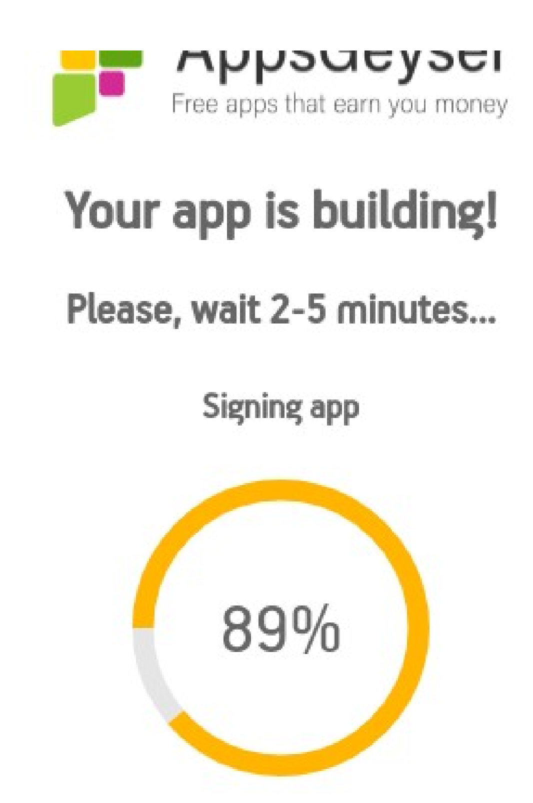
Now click “Download” on the left side of the screen



On the next page, click “Download APK”



Let the app finish building and follow instructions from there.



Please Note that the app may not work on “Samsung” devices, but should perform on Android devices.

To continue installation, the user has allow the phone to install unknown apps.

This can be done by going into settings and making the change.

Afterwards, a google play alert may pop up indicating that the app is unsafe and has been blocked.
Simply bypass this by clicking the “install anyway” option.

Once installed, the app should be ready for deployment. I cannot guarantee that this will work on any phone, however, and should seen as a beta version.

On the next page is the HTML code.

```
<!DOCTYPE html>
<html>
<head>
</head>
<body style="background-color: transparent;">

</body>
</html><html lang="en">

<head>

<title>Aerial Object Detection</title>

<meta charset="utf-8">

<meta http-equiv="X-UA-Compatible" content="IE=edge">

<meta name="viewport" content="width=device-width, initial-scale=1">

<link rel="stylesheet" href="style.css">

</head>

<style>



body {
```

```
width: 100%;

height:100%;

font-family: 'Open Sans', sans-serif;


color: #000;

font-size: 10px;

text-align: center;

letter-spacing: 1.2px;


}


h1 {


font-style: bold;

color: #ffffff;

}


video {


    position: fixed; right: 0; bottom: 0;
    min-width: 100%; min-height: 100%;
    width: auto; height: auto; z-index: -100;

    background-size: cover;

}


section {

opacity: 1;

transition: opacity 500ms ease-in-out;

}
```

```
.removed {

display: none;

}


.invisible {

opacity: 0.2;

}


.camView {
position: relative;
float: center;
text-align: center;
width: calc(100% - 20px);
margin: 10px;
cursor: pointer;
}

.camView p {
position: absolute;
padding: 5px;
background-color: rgba(255, 0, 0, 0.85);
color: #FFF;
border: 1px rgba(255, 0, 0, 0.7);
z-index: 2;
font-size: 17px;
}

.highlighter {

border: 4px dashed #ff0000;
z-index: 1;
position: absolute;
}</style>

<body>

<p id="del"> <b>Aerial Object Detection</b><br /><br />

Wait for the model to load before clicking the button to enable the webcam - at
which point it will become visible to use. The app will beep when an aerial object
is located. The longer an aerial object is hovering near you, the longer the
beeping noise. For soldiers, this could mean that a drone is targeting them.
```

Ideally, soldiers would use the app on their cell phones and attach the device to the top area of their vehicles or to their body while sleeping in the trenches. Keep mind that sim cards must be removed and cell phone wireless connectivity must remain "off" in combat environments. Before deployment, soldiers should connect to wifi and start the app. Once the app is started, a soldier can then disable wifi and leave the app running as he/she is deployed into a combat zone. For detecting aerial objects in combat, android phone should be mounted to the top of the backback or top of the helmet.

In civilian environments, the cell phone, with wireless turned on, could be placed on rooftops. With internet access, a user could view the aerial scene remotely with facebook live</p>

```
<p style = visibility: hidden id="textID"> Aerial Object Detected</p>


<div id="countdown"></div>


<section id="demos" class="invisible">


<p id="demo"></p>

<div id="liveView" class="camView">

<button id="webcamButton" onclick="start1()"  >Enable Webcam</button>

<video id="webcam" autoplay width="640" height="480"></video>

</div>

</section>



</div>

<p><br> </p>

<script src="https://cdn.jsdelivr.net/npm/@tensorflow/tfjs/dist/tf.min.js"
type="text/javascript"></script>

<script
src="https://cdn.jsdelivr.net/npm/@tensorflow-models/coco-ssd"></script>

<script src="script.js" defer></script>
<script> function start1() {document.getElementById("del").innerHTML = "";
var e = document.getElementsByTagName('html')[0];
```

```
}</script>
<script>const video = document.getElementById('webcam');
const liveView = document.getElementById('liveView');
const demosSection = document.getElementById('demos');
const enableWebcamButton = document.getElementById('webcamButton');
var model = undefined;
var children = [];
function getUserMediaSupported() {
return !!(navigator.mediaDevices &&
navigator.mediaDevices.getUserMedia);
}
if (getUserMediaSupported()) {
enableWebcamButton.addEventListener('click', enableCam);
} else {
console.warn('getUserMedia() is not supported by your browser');
}
function enableCam(event) {
if (!model) {
return;
}
event.target.classList.add('removed');
const constraints = {
video: true
};
navigator.mediaDevices.getUserMedia(constraints).then(function(stream) {
```

```
video.srcObject = stream;

video.addEventListener('loadeddata', predictWebcam);

});

}


var beep = (function () {

var ctxClass = window.audioContext ||window.AudioContext ||
window.AudioContext || window.webkitAudioContext

var ctx = new ctxClass();

return function (duration, type, finishedCallback) {


duration = +duration;

type = (type % 5) || 0;


if (typeof finishedCallback != "function") {

finishedCallback = function () {};

}


var osc = ctx.createOscillator();


osc.type = type;


osc.connect(ctx.destination);

if (osc.noteOn) osc.noteOn(0);

if (osc.start) osc.start();


setTimeout(function () {

if (osc.noteOff) osc.noteOff(0);
```

```
if (osc.stop) osc.stop();
finishedCallback();
}, duration);

};
})();

function textToSpeech() {
const speech = new SpeechSynthesisUtterance();
let voices = speechSynthesis.getVoices();
let convert = document.getElementById("textID").innerHTML;

speech.text = convert;

speech.volume = 1;
speech.rate = 0.9;
speech.pitch = 0;

speech.voice = voices[0];

speechSynthesis.speak(speech);
}


function pause() {
window.speechSynthesis.pause();
}


function stop() {
```

```
window.speechSynthesis.cancel();
}


cocoSsd.load().then(function (loadedModel) {
model = loadedModel;
demosSection.classList.remove('invisible');
});

function predictWebcam() {

model.detect(video).then(function (predictions) {
for (let i = 0; i < children.length; i++) {
liveView.removeChild(children[i]);
}
children.splice(0);
window.speechSynthesis.pause();
for (let n = 0; n < predictions.length; n++) {

if ( predictions[n].class == "bird") {
predictions[n].class = "Aerial Object Detected"
window.speechSynthesis.resume();
textToSpeech();
beep(1000, 2, function () {
});
const p = document.createElement('p');
p.innerText = predictions[n].class + ' - with '
```

```
+ Math.round(parseFloat(predictions[n].score) * 100)
+ '% confidence.';
p.style = 'margin-left: ' + predictions[n].bbox[0] + 'px; margin-top: '
+ (predictions[n].bbox[1] - 10) + 'px; width: '
+ (predictions[n].bbox[2] - 10) + 'px; top: 0; left: 0;';

const highlighter = document.createElement('div');
highlighter.setAttribute('class', 'highlighter');
highlighter.style = 'left: ' + predictions[n].bbox[0] + 'px; top: '
+ predictions[n].bbox[1] + 'px; width: '
+ predictions[n].bbox[2] + 'px; height: '
+ predictions[n].bbox[3] + 'px;';

liveView.appendChild(highlighter);
liveView.appendChild(p);
children.push(highlighter);
children.push(p);

}
else{
}

if ( predictions[n].class == "kite") {
predictions[n].class = "Aerial Object Detected"
window.speechSynthesis.resume();
textToSpeech();
```

```
beep(1000, 2, function () {
});

const p = document.createElement('p');
p.innerText = predictions[n].class + ' - with '
+ Math.round(parseFloat(predictions[n].score) * 100)
+ '% confidence.';
p.style = 'margin-left: ' + predictions[n].bbox[0] + 'px; margin-top: '
+ (predictions[n].bbox[1] - 10) + 'px; width: '
+ (predictions[n].bbox[2] - 10) + 'px; top: 0; left: 0;';

const highlighter = document.createElement('div');
highlighter.setAttribute('class', 'highlighter');
highlighter.style = 'left: ' + predictions[n].bbox[0] + 'px; top: '
+ predictions[n].bbox[1] + 'px; width: '
+ predictions[n].bbox[2] + 'px; height: '
+ predictions[n].bbox[3] + 'px;';

liveView.appendChild(highlighter);
liveView.appendChild(p);
children.push(highlighter);
children.push(p);

}
else{
```

```
}



if ( predictions[n].class == "frisbee") {
predictions[n].class = "Aerial Object Detected"
window.speechSynthesis.resume();
textToSpeech();
beep(1000, 2, function () {
});


const p = document.createElement('p');
p.innerText = predictions[n].class + ' - with '
+ Math.round(parseFloat(predictions[n].score) * 100)
+ '% confidence.';
p.style = 'margin-left: ' + predictions[n].bbox[0] + 'px; margin-top: '
+ (predictions[n].bbox[1] - 10) + 'px; width: '
+ (predictions[n].bbox[2] - 10) + 'px; top: 0; left: 0;';

const highlighter = document.createElement('div');
highlighter.setAttribute('class', 'highlighter');
highlighter.style = 'left: ' + predictions[n].bbox[0] + 'px; top: '
+ predictions[n].bbox[1] + 'px; width: '
+ predictions[n].bbox[2] + 'px; height: '
```

```
+ predictions[n].bbox[3] + 'px;';

liveView.appendChild(highlighter);
liveView.appendChild(p);
children.push(highlighter);
children.push(p);

}
else{
}

if ( predictions[n].class == "remote") {
predictions[n].class = "Aerial Object Detected"
window.speechSynthesis.resume();
textToSpeech();
beep(1000, 2, function () {
});


const p = document.createElement('p');
p.innerText = predictions[n].class + ' - with '
+ Math.round(parseFloat(predictions[n].score) * 100)
+ '% confidence.';
p.style = 'margin-left: ' + predictions[n].bbox[0] + 'px; margin-top: '
+ (predictions[n].bbox[1] - 10) + 'px; width: '
+ (predictions[n].bbox[2] - 10) + 'px; top: 0; left: 0;';
```

```
const highlighter = document.createElement('div');
highlighter.setAttribute('class', 'highlighter');
highlighter.style = 'left: ' + predictions[n].bbox[0] + 'px; top: '
+ predictions[n].bbox[1] + 'px; width: '
+ predictions[n].bbox[2] + 'px; height: '
+ predictions[n].bbox[3] + 'px;';

liveView.appendChild(highlighter);
liveView.appendChild(p);
children.push(highlighter);
children.push(p);

}
else{
}


if ( predictions[n].class == "knife") {
predictions[n].class = "Aerial Object Detected"
window.speechSynthesis.resume();
textToSpeech();
beep(1000, 2, function () {
});



const p = document.createElement('p');
p.innerText = predictions[n].class + ' - with '
```

```
+ Math.round(parseFloat(predictions[n].score) * 100)
+ '% confidence.';
p.style = 'margin-left: ' + predictions[n].bbox[0] + 'px; margin-top: '
+ (predictions[n].bbox[1] - 10) + 'px; width: '
+ (predictions[n].bbox[2] - 10) + 'px; top: 0; left: 0;';

const highlighter = document.createElement('div');
highlighter.setAttribute('class', 'highlighter');
highlighter.style = 'left: ' + predictions[n].bbox[0] + 'px; top: '
+ predictions[n].bbox[1] + 'px; width: '
+ predictions[n].bbox[2] + 'px; height: '
+ predictions[n].bbox[3] + 'px;';

liveView.appendChild(highlighter);
liveView.appendChild(p);
children.push(highlighter);
children.push(p);

}
else{
}

if ( predictions[n].class == "airplane") {
predictions[n].class = "Aerial Object Detected"
window.speechSynthesis.resume();
textToSpeech();
```

```
beep(1000, 2, function () {

});



const p = document.createElement('p');

p.innerText = predictions[n].class + ' - with '

+ Math.round(parseFloat(predictions[n].score) * 100)

+ '% confidence.';

p.style = 'margin-left: ' + predictions[n].bbox[0] + 'px; margin-top: '

+ (predictions[n].bbox[1] - 10) + 'px; width: '

+ (predictions[n].bbox[2] - 10) + 'px; top: 0; left: 0;';


const highlighter = document.createElement('div');

highlighter.setAttribute('class', 'highlighter');

highlighter.style = 'left: ' + predictions[n].bbox[0] + 'px; top: '

+ predictions[n].bbox[1] + 'px; width: '

+ predictions[n].bbox[2] + 'px; height: '

+ predictions[n].bbox[3] + 'px;';

liveView.appendChild(highlighter);

liveView.appendChild(p);

children.push(highlighter);

children.push(p);

}

else{
```

```
}

}

window.requestAnimationFrame(predictWebcam);

});

}


</script>

</body>

</html>
```